U.S. AIR FORCE

EGPS Status

SIWG-10

Mr. Bobby Brown
WR-ALC/LXAA
Robins AFB GA
(478) 926-8242
Bobby.Brown2@robins.af.mil

U.S. AIR FORCE

Overview

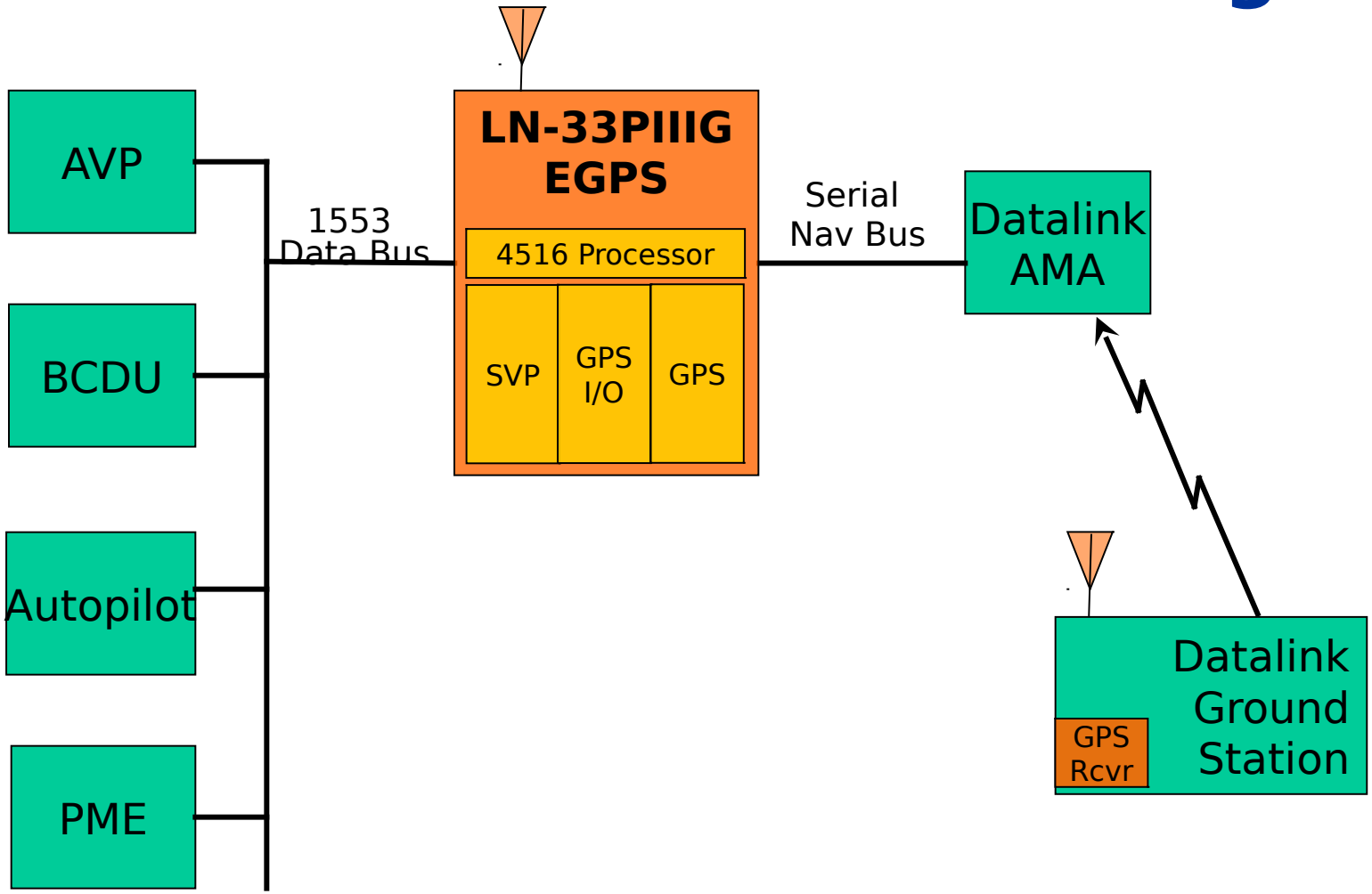
- PIIIG Program / System Description
- Status
  - System Block Diagram
  - Software versions
  - Upcoming Events
  - Summary

EGPS Description

- An integrated, coupled INS/GPS
  - Designated the LN-33 PIIIG…based on legacy PIIIA
  - Required for ASARS-2 Improvement Program's ORD
- A highly accurate system incorporating advanced filters and signal enhancements
- Includes the following advanced features:
  - Includes real-time interface with data link
  - Includes EMER and BULL functions
  - Includes In-Flight Align
- Three software versions: PIIIG, PIIIG as a PIIIA, (backwards compatible) and RAMP

U.S. AIR FORCE

Navigation System Block Diagram



U.S. AIR FORCE

Navigation System S/W & H/W

- **LN-33PIIIG Embedded GPS/INS**
  - **TCTOs approved for Software and Firmware releases in b**

	Block 0 A/C	Block 10 A/C	Block 20 A/C
Software (4516 Processor)	2.52 2.53	3.0100	4.0103 **4.0107**
Firmware (GPS I/O)	**N/A**	1.0060	1.0060 **1.0062**
(SVP)	2.0007	2.0007	2.0007

    - **TO-TO & TO-FROM steering changes in work (ECD Feb 05)**
  - **Hardware**
    - **LN-33PIIIG Unit dash #2 changed with SVP-3 firmware change in INU back shop – All locations have been upgraded**

U.S. AIR FORCE

Other Navigation System Activities

- **Performance**
  - **Raytheon stated in 10 Feb 04 EGPS/ASARS meeting that no further LN-33PIIIG improvements needed to support ASARS-2A**
  - **Initiative to add Embedded GPS/INS in ASARS-2/2A nose *Pending funding***
- **Combined Joint Task Force Exercise (12-22 Jun 04)**
  - **Data has been collected and forwarded to AFOTEC for review**
  - **Instrumentation recorder on fielded A/C to determ performance in GPS Jamming**
- **Portable GPS Tester Kits**
  - **Provides GPS test capability in hangars**
  - **Three kits produced – More kits and spares ordere**
  - **Two delivered to Beale AFB in Jan 04**
- **EGPS Power Supply Modification (June 2004) *Pending funding***
  - **Maintain GPS function during INS power "off/on" for In-Flight Align**
- **Airborne Accuracy Improvement Program**
  - **Provides equivalent navigation accuracy for BLOS operations**
  - **Harris Corporation ground station changes only – no airborne changes (18 month program began Mar 04)**

Summary

- New INU Versions being released with RAMP 7.0
  - Perform IFA without Keyed GPS data
- TO-TO & TO FROM Steering changes in work
- GPS/INS in ASARS-2A nose waiting funding
- Additional GPS Testers being purchased
- AAI program in work
- Awaiting results from CJTFEX (12-22 June 04)